639
C7133c
1947

REMOTE STORAGE

1947 CREEL CENSUS REPORT

A Publication of

FISHERIES MANAGEMENT DIVISION

THE COLORADO GAME AND FISH DEPARTMENT

C. N. Feast, Director

Feb 25

1947 CREEL CENSUS REPORT

By

W. D. Klein
Biologist

Field Staff

Warden Personnel

THE LIBRARY OF THE
FEB 25 1953
UNIVERSITY OF ILLINOIS

639
C7133c
1947

REMOTE STORAGE

CONTENTS

Page

Introduction 1
Summary 2

PART ONE - Trout Waters 3
- Trout Streams - Trout Stream Summary Table 3
- Trout Lakes 3
- Trout Lake Summary Table 4
- Fishing Evaluation Interview 4
- Explanation of Table Three 5
- State Wide Totals, 1942-1946 - Table 9
- Explanation of Comparison Tables 10
- Comparison Table - 1943-47 - Trout Streams 12
- Comparison Table - 1943-47 - Trout Lakes 13
- Explanation of Table Six 14
- Trout Lakes and Reservoirs, Comparison Table - 1943-47 15
- Explanation of Table Seven 18
- Streams and Rivers, Comparison Table - 1943-47 . . . 20
- Trout Stocking - Trout Stocking Table, 1944-47 . . . 24
- Out of State Fishermen 25

PART TWO - Warm Water Lakes 26
- Warm Water Lakes Table 26
- Explanation of Table Ten - Warm Water Lakes, Comparison Table - 1943-47 27
- Explanation of Table Eleven 27
- Comparison Table of Warm Water Lakes 28
- Warm Water Stocking 29
- Warm Water Fish Stocked (By Number) 1944-1947 . . . 30

35F53 dir.g. 1947-1951 ser.

TABLES

No.		Page
I	Trout Stream Summary - 1947	3
II	Trout Lake Summary - 1947	4
III	State Wide Totals - 1942-1946	9
IV	Trout Streams, Comparison Table - 1943-47	12
V	Trout Lakes, Comparison Table - 1943-47	13
VI	Trout Lakes and Reservoirs, Comparison Table 1943-47	15
VII	Streams and Rivers, Comparison Table - 1943-47	20
VIII	Trout Stocked (By Number) 1944-1947	24
IX	Warm Water Lakes	26
X	Warm Water Lakes, Comparison Table - 1943-47	27
XI	Comparison Table of Warm Water Lakes	28
XII	Warm Water Fish Stocked (By Number) 1944-1947	30

COLORADO GAME AND FISH DEPARTMENT

MANAGEMENT DIVISION

GILBERT N. HUNTER, GAME AND FISH MANAGER

1947 WARDEN CONTACT AND CREEL CENSUS REPORT

W. D. Klein

INTRODUCTION:

This report is a summary of the fishing conditions in the State during 1947, obtained by compilation of the data made available by warden reports. To this data was applied information gathered by the 1947 fishing evaluation interview conducted by Mr. Carlson. Comparisons are made, whenever possible, between the 1947 season and the preceding four seasons.

All of the wardens (54) made out individual reports on each fisherman contacted in the field. Included in the report is the location (stream or lake) where the fisherman was contacted, the number of fish in possession by species, length by species, number of hours fished up to contact time, number of throwbacks (trout under six inches), and fisherman's town and state of residence.

Tables are used to present most of the material in this report. They are explained in the body of the report as necessary.

The entire staff of the Fish Research Division aided in the preparation of this report.

SUMMARY:

1. Total sales of combination small game and fishing licenses dropped off slightly from the 1946 sales, according to present incomplete reports.
2. Hatchery output continued to increase in 1947.
3. Wardens checked 22,916 trout fishermen and 5,003 warm water fishermen.
4. The catch per man hour of 0.894 trout in 1947 shows a definite increase over the figure of 0.79 for 1946.
5. The warm water catch per man hour of 1.34 for 1947 was substantially greater than the figure of 1.08 for 1946.
6. The average daily trout catch per fisherman in 1947 was 5.30 fish on streams and 2.45 fish on lakes.
7. Of the total number of trout fishermen checked, 1,911 or 8.3% were from out-of-state.
8. The non-resident fishermen catch per man hour in 1947 was 0.59, considerably lower than the resident catch per man hour.
9. Trout caught in 1947 averaged 8.76 inches in length from streams, and 11.67 inches in length from lakes.
10. Rainbow and Brook trout made up the major portion of the catch in 1947. Of the fish checked on streams 54.76% were Rainbow and 28.43% were Brook trout, while in lakes 77.1% were Rainbow and 12.4% were Brook.
11. Warm water fish checked showed Catfish (Bullheads) and Perch to be the dominant species, with catfish making up 63.06% of the total catch checked.

PART ONE

Trout Waters

Trout Streams

On trout streams in 1947 a total of 11,665 fishermen were contacted who had fished a total of 37,958 hours. The average time fished at time of contact was 3.26 hours. The catch per man hour expressed in numbers of fish was 1.02 when contacted. An average fisherman made a daily catch of 5.30 trout. This figure is derived by applying the average number of hours a person fished per day, (5.20 times on streams) obtained from the 1947 interview data, to the average catch per man hour on streams. The accompanying table is a summary of the warden checks made on trout streams.

TABLE I

TROUT STREAM SUMMARY - 1947

	No.of Fish Checked	Percent of Total Fish Checked	Average Length in Inches	Number of Streams in Which Checked
Rainbows	21,590	54.76	9.10	219
Lochs	4,194	11.27	9.43	119
Brooks	10,712	28.43	7.92	232
Natives	1,834	4.90	8.11	121
Whitefish	204	.64	9.36	5

Trout Lakes

A total of 11,251 fishermen, who had fished 50,771 hours, were contacted on lakes. These fishermen had fished an average of 4.5 hours when contacted. The catch per man hour was .43 fish. For all lake fishermen the average daily catch per person

contacted was 2.45 fish. This figure was found by multiplying 5.69, the number of hours fished per day on trout lakes by the average fisherman, as determined by interviews in 1947, by the average catch per man hour on lakes.

TABLE II

TROUT LAKE SUMMARY - 1947

	No. of Fish Checked	Percent of Total Fish Checked	Average Length in Inches	Number of Lakes in Which Checked
Rainbows	16,794	77.1	11.8	71
Lochs	1,501	6.6	12.1	24
Brooks	2,842	12.4	9.8	63
Natives	716	3.1	10.3	33
Mackinaws	155	.8	13.1	1

Fishing Evaluation Interview

Because the fishing evaluation survey data obtained during 1947 is used in computing total catch and other pertinent data included in this report, an explanation of the methods of conducting this survey is necessary.

The survey was conducted by counties, with each county being given weight according to the number of small game hunting and fishing licenses sold in that county as compared with the State wide sale of these licenses. Sufficient numbers of interviews were made to give a representative State wide sample, as determined by the National Opinion Research Center at Denver University. All the interviews were conducted at random among the license holders.

The questions asked by interviewers, which resulted in information used in this report, are as follows:

Number of days on trout streams;

Number of days on trout lakes;

Number of days on warm water lakes;

Average number of hours fished per day on trout streams;

Average number of hours fished per day on trout lakes;

Average number of hours fished per day on warm water lakes.

The 1947 interview covered the 1946 fishing season. A complete report on last year's evaluation interview will be published by the Department at a later date.

Table III - Explanation

The totals listed in the following table are derived by applying the 1947 fishing evaluation interview data to the license sales for the respective years (1942 - 1946), and by applying the catch per man hour as derived from warden reports, to the total fishing hours in order to obtain the trout catch information.

Specifically, the 1946 data was compiled in the following manner:

Total Fishing Days

Determined by adding the total trout days and the warm water fishing days.

Total Trout Days

The sum of the number of days on trout streams and the number of days on trout lakes.

Days on Trout Streams

Obtained by multiplying the total season licenses sold by 8.44185, the number of days the average license holder went fishing on streams, as obtained from interviews. No data was available on the number of days the holder of a three-day license went fishing. As a conservative estimate, 1½ days were allotted to these holders for their average time spent on trout streams.

Days on Trout Lakes

Obtained by multiplying the total season licenses sold by 2.05252, the number of days the average license holder spent fishing on lakes, as obtained from interviews. A conservative estimate of one-half day of fishing on lakes was allotted to the average three-day license holder.

Days on Warm Water Lakes

Determined by multiplying total season licenses sold by 1,38433, the number of days the average license holder spent fishing on warm waters, as found from interviews. Since warden contacts showed there were very seldom any out-of-state fishermen checked on warm water, no allowance was made for the three-day license holders.

Total Fishing Hours

Obtained by adding total trout hours to total warm water hours.

Total Trout Hours

The sum of hours on trout streams and hours on trout lakes.

Hours on Trout Streams

Determined by multiplying the number of days on trout streams by 5.2051, the number of hours fished by the average license holder per day on trout streams as determined from interviews.

Hours on Trout Lakes

Found by multiplying the number of days on trout lakes by 5.6857, the number of hours fished by the average license holder per day on trout lakes, as determined from interviews.

Hours on Warm Water Lakes

Found by multiplying the number of days on warm water by 4.436, the number of hours fished by the average license holder per day on warm water, as determined from interviews.

Total Fish Caught

Obtained by adding total trout caught and total warm water fish caught.

Total Trout

The sum of trout caught on streams and trout caught from lakes.

Catch on Trout Streams

Determined by multiplying the hours on trout streams

by 0.86, the catch per man hour on trout streams in 1946. The catch per man hour was computed from the 1946 warden reports.

Catch on Trout Lakes

Determined by multiplying the hours on trout lakes by 0.522, the catch per man hour on trout lakes in 1946, as computed from the 1946 warden reports.

Catch on Warm Water Lakes

Determined by multiplying the hours on warm water by 1.08, the catch per man hour on warm water in 1946, as computed from 1946 warden reports.

Catch Per Man Hour on Trout Waters

Determined by dividing total trout caught by total trout hours.

Catch Per Man Hour on Warm Waters

Determined by dividing total catch on warm water by total hours on warm water.

It was not possible to include the 1947 data in this table because the license sales for 1947 have not yet been compiled. This table is not strictly comparative from year to year because of bias caused by the war years.

Compilation of the 1947 license sales was practically completed when this report was ready for publication and therefore has been added to the report. There is a deficit of less than 500 in the following listing of 1947 license sales.

TABLE III

STATE WIDE TOTALS
1942-1946

	1942	1943	1944	1945	1946	194
Total Licenses Sold	159,735	161,269	171,392	211,763	286,603	276,47
Resident Licenses Sold	134,157	145,901	153,748	183,369	224,721	232,08
Season O.S. Licenses Sold	8,303	6,183	7,879	12,936	27,171	9,38
3-Day O.S. Licenses Sold	17,275	9,185	9,765	15,458	34,711	35,01
Total Season	142,460	152,084	161,627	196,305	251,892	241,46
Total Fishing Days	1,703,469	1,824,929	1,939,228	2,362,763	3,061,569	2,868,23
Total Trout Days	1,506,257	1,614,395	1,715,483	2,091,013	2,712,868	2,533,97
Days on Trout Streams	1,205,217	1,297,648	1,379,079	1,680,364	2,178,500	2,038,36
Days on Trout Lakes	301,040	316,747	336,404	410,649	534,368	495,60
Days on Warm Water Lakes	197,212	210,534	223,745	271,750	348,701	334,26
Total Fishing Hours	8,859,730	9,489,244	10,083,468	12,363,901	15,924,403	14,215,09
Total Trout Hours	7,984,898	8,555,316	9,090,936	11,158,418	14,377,566	12,732,31
Hours on Trout Streams	6,273,275	6,754,388	7,178,244	8,823,591	11,339,310	9,914,48
Hours on Trout Lakes	1,711,623	1,800,928	1,912,692	2,334,827	3,038,256	2,817,83
Hours on Warm Water Lakes	874,832	933,928	992,532	1,205,483	1,546,837	1,482,77
Total Fish Caught	10,051,871	10,957,200	11,443,045	13,726,215	13,002,273	13,311,361
Total Trout Caught	9,159,543	10,023,272	9,904,621	12,617,171	11,331,690	11,324,440
Catch on Trout Streams	7,841,594	8,240,353	8,183,198	11,029,489	9,751,807	10,112,770
Catch on Trout Lakes	1,317,949	1,782,919	1,721,423	1,587,682	1,579,893	1,211,670
Catch on Warm Water Lakes	892,328	933,928	1,538,424	1,109,044	1,670,583	1,986,921
Catch Per Man Hour - Trout Waters	1.15	1.17	1.09	1.13	0.79	0.89
Catch Per Man Hours - Warm Waters	1.02	1.0	1.55	0.92	1.08	1.34

Comparison Tables Explanation

Some explanation is necessary to properly analyze the following comparison tables on trout streams and lakes in general, and on individual streams and lakes.

First of all, the war years (1942-1945) cannot be directly compared with the following years. The average fisherman then was not the same as the average trout fisherman now, and, of course, the fishing intensity was much lower during the war years. Also, fish stocking was greatly curtailed by the war.

The warden force was greatly increased in 1947. By the end of that year's fishing season fifty-four wardens were employed by the Department as compared to thirty-five wardens on the force in 1946. The increase in wardens resulted in the checking of more fishermen on more streams, which is desirable and which will eventually result in good comparison data. However, this situation greatly lessens the comparative value of the tables between 1947 and the previous years.

The comparison tables will assume considerably more value when the factors involved in gathering the data become more constant. The reader is cautioned not to take any of the material in the comparison tables on trout streams and trout lakes too literally, for the reasons mentioned in the above paragraphs. It is felt that even trends indicated by the tables between 1943 and 1947 are subject to some bias.

Comparison of catch and stocking record data on individual trout streams and trout lakes is much more valuable, from a

management viewpoint, than state-wide comparison of trout waters. However, it is essential that a sufficient number of fishermen be checked on each body of water involved, to give a representative sample, before accurate conclusions can be drawn. Only those streams and lakes on which a relatively large number of fishermen have been contacted are presented in this report.

It will be noted in the table on individual trout streams that some of the rivers are given a section number in 1947. During the last summer the more important streams were broken into management sections or units by stream survey crews. This was done so that better management practices could be adopted on the individual streams. For example.

The South Platte River is broken into seven management sections as follows:

Section 1. From the State line to confluence with Bear Creek at Denver.

Section 2. From confluence with Bear Creek to Waterton at mouth of canyon.

Section 3. From Waterton to confluence with Horse Creek at Deckers.

Section 4. From confluence with Horse Creek to Cheesman Dam outlet.

Section 5. From Cheesman Dam inlet to Lake George outlet.

Section 6. From Lake George inlet to Eleven Mile Dam outlet.

Section 7. From Eleven Mile Reservoir inlet to confluence of Middle Fork of the South Platte and South

LIBRARY
UNIVERSITY OF ILLINOIS

Fork of the South Platte. (The junction of the South Fork and the Middle Fork of the South Platte River is considered as the origin of the South Platte River.)

Section divisions are made where some noticeable change in the stream or stream bed or a fish barrier, caused by either a natural or artificial condition, would indicate that the areas on each side of such division point should be given individual attention from a management standpoint. To conform to this plan, it is necessary to record all stocking and catch data by these pre-determined stream sections. Recordings by sections was only partially accomplished in 1947.

TABLE IV

TROUT STREAMS
COMPARISON TABLE - 1943-47

Year	No. of Fishermen Contacted	Catch Per Man Hour (No.of Fish)	Average Length All Trout In Inches	Percent of Total Catch by Species			
				Rainbow	Brown	Brook	Native
1943	8,707	1.22	9.56	74.0	10.0	10.0	6.0
1944	7,282	1.14	9.64	67.0	11.0	16.0	6.0
1945	13,011	1.25	9.41	51.2	19.7	21.6	7.5
1946	11,370	.86	9.1	58.4	11.78	22.09	7.04
1947	11,665	1.02	8.76	54.76	11.27	28.43	4.90

Considering the above table, it is felt the increased number of wardens in 1947 would tend to give a higher catch per man hour because more fishermen would be contacted on more of the remote

streams where a higher than average catch per man hour is the rule. Further substantiation of this theory is offered by the smaller average size of the fish and the increased percentage of brook trout. In the more inaccessible streams brook trout predominate and these streams are often over-populated with small trout. Future years should give valuable comparisons. The catch per man hour is thought to be conservative, because even with the increased warden staff the greater part of the warden's time is necessarily devoted to the more heavily fished areas having the lower catch per man hour.

TABLE V

TROUT LAKES
COMPARISON TABLE - 1943-47

Year	No. of Fishermen Contacted	Catch Per Man Hour (No.of Fish)	Average Length All Trout In Inches	Percent of Total Catch by Species				
				Rainbow	Brown	Brook	Native	Mackinaw
1943	6,091	.99	11.02	70.0	5.0	19.0	5.0	1.0
1944	5,744	.90	11.20	56.0	11.0	30.0	3.0	
1945	6,185	.68	10.75	54.0	16.0	25.4	4.6	
1946	6,534	.52	10.60	61.3	6.13	25.98	6.20	.039
1947	11,251	.43	11.67	77.1	6.6	12.4	3.1	.8

The 1947 increase in warden staff injects an undetermined amount of bias into this table. Also, the opening of Eleven Mile Reservoir, where 1,146 fishermen were checked having a catch per man hour of .006, brought the catch per man hour down considerably.

In fact, by eliminating the Eleven Mile Reservoir data the 1947 catch per man hour is slightly better than the 1946. For a reason similar to that listed on the preceding page, it is felt that the above catch per man hour is conservative.

Table VI - Explanation

Practically all of the lakes listed in the following tables are those where wardens had contacted more than fifty fishermen who had fished more than one hundred hours during each of the years considered. A few exceptions were made when it was deemed desirable to list a lake with fewer than fifty fisherman contacts because the lake represented the main fishing lake in that locality.

The year to year comparisons on catch per man hour would be somewhat unreliable because of the war years, but the dominant species and average length data is unbiased.

TABLE VI

TROUT LAKES AND RESERVOIRS
COMPARISON TABLE - 1943-47

Lake or Reservoir	Year	Catch Per Man Hour	Dominant Species	(All Trout) Average Length Inches	Stocking Record		
					Under 3"	3" to 6"	Over 6"
Antero Reservoir -	1945	.34	B				
	1946	.30	B	12.3			
	1947	.14	B	14.9			
Beaver Lake (Grand Mesa)							
	1945	1.54	R				
	1946	.50	B	8.9			R 2,641
	1947	1.03	R	8.7			R 1,084
DeWeese Reservoir -	1943	.38	L	11.5	L 22,956		
	1944	.16	L	12.0	R 19,264 L 5,320		
	1945	.16	L	14.0	R 28,080 L 35,836	R 1,276	R 2,300
	1946	.21	L	13.9	L 24,800		R 1,019 L 855
	1947	.26	R	12.2	L 23,490 B 5,985		R 10,869 L 2,488
Eggleston Lake (Grand Mesa)					R 10,064		
	1945	1.01	B	9.0	B 26,037		
	1946	1.29	B	9.2	L 28,800		R 5,047
	1947	1.0	B	9.3		L 21,046 B 4,836	R 6,916
Green Mtn. Reservoir	1944	.34	L	12.0			R 5,006
	1945	.30	L	13.5			R 5,559
	1946	.25	R	12.9			R 1,930
	1947	.14	R	11.5	N 18,000		R 3,578
Groundhog Reservoir	1946	.24	L	13.3	L 40,200 B 5,472		
	1947	.12	L	14.8	L 16,800 B 23,520		
Island Lake (Grand Mesa)					N 8,897		
	1943	.63	R	10.0	R 51,852		
	1944	1.94	R	11.0		R 7,752	
	1945	.59	B	9.5	R 30,368 N 8,528		
	1946	.57	R	9.7			R 6,582
	1947	.93	R	10.1			R 5,770
Jefferson Lake (South Park)	1946	.57	B	11.6	R 12,000		
	1947	.51	B	10.2		L 8,944	
Joe Moore Reservoir (Mancos)	1945	1.41	R	12.0	B 3,568 R 3,568		
	1946	.51	R	9.7			
	1947	.42	R	8.2			
Mesa Lake (Grand Mesa)	1943	2.52	B	10.0			
	1944	1.30	B	9.5			
	1945	1.34	B	9.5	N 17,280		
	1946	.66	R	9.9			R 5,138
	1947	.82	R	10.1			R 7,206

TABLE VI (Continued)

Lake or Reservoir	Year	Catch Per Man Hour	Dominant Species	(All Trout) Average Length Inches	Stocking Record		
					Under 3"	3" to 6"	Over 6"
Monument Lake	1943	2.09	R	8.5	R 13,695		R 6,535 N 3,826
	1944	1.96	R	10.0			R 12,521
	1945	1.09	R	10.5			R 14,889
	1946	.88	R	10.0	R 16,192 L 9,600		R 17,980 N 862
	1947	.84	R	9.6	R 29,100 N 9,032		R 33,018 L 750
Parvin Lake	1943	.16	R	13.0			
	1944	.97	R	13.0			
	1945	1.12	R	11.0			
	1946	CLO	SED	TO	FISH	ING	
	1947	.71	R	13.5			
San Isabel Lake	1943	.35	R	10	R 37,920		R 21,265 N 250
	1944	.84	R	8.5	R 7,200		
	1945	.88	R	8.5			R 7,336
	1946	.47	R	9.2	L 26,280		R 14,530
	1947	.37	R	8.7			
Sunset Lake (Grand Mesa)							
	1945	.82	R	9.5			
	1946	.44	R	11.1		L 4,412	
	1947	.86	R	8.9			R 2,848
Sweetwater Lake	1943	1.18	B	10.0	R 25,960 B 25,420		
	1944	2.10	B	10.0	B 1,632		
	1945						
	1946	1.27	B	10.1			
	1947	.21	B	10	B 12,800		R 4,524
Tarryall Lake	1943	.38	R	11	R372,368 L243,030		
	1944	.36	L	11	R 57,258 L 78,460		
	1945	.45	L	11.5	R 129,400 L 61,400	R 21,414	
	1946				R 52,000 L 114,700		
	1947	.32	R	11.6	R 6,000 L236,400		
Taylor Reservoir	1943	2.12	R	10.5	R 110,500		R 6,600
	1944	1.48	R	10.0			
	1945	.64	R	10.5			
	1946	.76	R	12.4			
	1947	.55	R	10.7			

TABLE VI (Continued)

Lake or Reservoir	Year	Catch Per Man Hour	Dominant Species	(All Trout) Average Length Inches	Stocking Record		
					Under 3"	3" to 6"	Over 6"
Trout Lake (Telluride)							
	1944	5.54	B	8.5		R 8,875	
	1945	1.01	B	8.5		R 5,648	
	1946	.60	R	8.6		L 10,710	
	1947	.62	R	8.9			R 2,835
Vallecito Reservoir	1943	.43	R	13.0	R 62,900 B 33,300 N 76,260	R 17,406	
	1944	.75	R	14.0	R220,168 L 78,456 B 43,256 N 82,944		
	1945	.46	R	11.0	R240,390 L 43,000 B 35,160 N 45,000		R 600
	1946	.32	R	11.1	R 18,560 L 117,936 B 51,598 N 28,800		
	1947	.26	R	13.5	L 95,712 B 43,200		R 11,510 L 500
Ward Lake (Grand Mesa)							
	1943	.79	B	9.0	B 19,890		R 2,394
	1944	1.24	B	10.0		B 9,804	
	1945	.76	B	10.0	R 14,040		
	1946	1.10	B	7.5			R 3,420
	1947	1.38	R	8.73			R 4,257
William's Fork Reservoir							
	1944	.31	R	12.0			
	1945	.32	R	11.0			
	1946	.17	R	10.8			
	1947	.47	R	10.6			

KEY: R - Rainbow

L - Loch Leven

B - Brook

N - Native

Table VII - Explanation

In the following table, only those streams where wardens had contacted enough fishermen, one hundred contacts with two hundred hours fishing time, were used in order to give a representative sample of fishing conditions. Where certain years are omitted on a stream, the contacts were too few to make the data of value.

Comparisons by years are not too valuable at the present time because of the influence of the war upon fishing intensity, and because of the increase of wardens in 1947. The warden increase could bias the figures for comparison purposes by increasing the number of fish checked in certain sections of the river. As an example, more fish checked on the headwaters of the Rio Grande River would probably result in a higher catch per man hour, an increase in the per cent of brook trout, and a decrease in the average size when considering the Rio Grand River as a whole.

A few of the rivers were sectioned, as previously explained, and the section on which most of the warden contacts were made is the section given in the table. The data on these sections is not strictly comparable to the data of previous years. However, it is hoped that in future years all data will be applied by sections and therefore be more valuable than it is at present.

The boundaries of the sections appearing in the following table are:

Arkansas River, Section 3 - Extends from the upper end of the Royal Gorge upstream to the confluence with Lake Creek, a distance of one hundred miles.

Colorado River, Section 6 - From the confluence of the Blue River at Kremmling upstream to the confluence of the Fraser River near Granby, a distance of 33 miles.

Conejos River, Section 2 - Extends from diversion dam located one quarter mile west of Highway 285 upstream to the confluence of South Fork Conejos River, a distance of forty-two miles.

Elk River, Section 2 - From the bridge one mile above the town of Clark upstream to the confluence of Gold and Gilpin Creeks, a distance of thirteen miles.

Rio Grande River, Section 6 - From the confluence with the South Fork Rio Grande River upstream to the confluence of Trout Creek, a distance of thirty-six miles.

TABLE VII

STREAMS & RIVERS
COMPARISON TABLE - 1943-47

Stream or River	Year	Catch Per Man Hour	Dominant Species	(All Trout) Average Length Inches	Stocking Record		
					Under 3"	3" to 6"	Over 6"
Arkansas River	1943	.62	L	10.0			R 19,378 L 31,234
	1944	.94	R	9.5			R 16,612 L 8,836
	1945	.73	L	10.0			R 16,033 L 15,721
	1946	.50	L	11.9			R 14,791 L 4,424
Sec. 3	1947	.64	R	8.8			R 17,124 L 5,177
Bear Creek (Near Denver)	1943	.77	R	8.5			R 8,905 L 1,596
	1944	.72	R	9.5			R 22,850 L 4,900
	1945	.83	R	8.5			R 19,100 L 6,350
	1946	.78	R	9.5			R 15,400 L 7,500
	1947	1.05	R	9.2			R 10,850 L 450
Boulder Creek (Middle)	1943	.99	R	8.0			R 7,950 L 1,897
	1944	.29	R	8.0			R 9,850
	1945	.93	R	9.0			R 5,100 L 1,750
	1946	.53	R	9.7			R 1,200 L 1,800
	1947	.52	R	9.2			R 6,332
Chicago Creek (Clear Creek) (Idaho Springs)	1943	.79	L	9.0			R 1,028 L 1,310
	1944	.37	R	9.5			R 6,200
	1945	.57	R	8.5			R 3,500
	1946	.24	R	9.9			R 3,300
	1947	.42	R	9.3			L 3,000
Chief Creek	1943	1.67	R	9		R 7,134	R 4,669
	1944	1.84	R	9			R 2,445
	1945	1.21	L	9			R 4,845 L 3,552
	1946	1.68	R	9.3			R 7,590
	1947	1.35	R	9.6			R 11,530
Colorado River	1943	1.06	R	8.5	L 15,680	L 2,680	R 23,217 L 11,525
	1944	.57	R	10.0			R 33,650 L 2,856
	1945	.64	R	9.5			R 31,450 L 7,039
	1946	.63	R	9.5			R 83,718
Sec. 6	1947	.65	R	9.3			R 21,291 L 8,984

TABLE VII (Continued)

Stream or River	Year	Catch Per Man Hour	Dominant Species	(All Trout) Average Length Inches	Stocking Record		
					Under 3"	3" to 6"	Over 6"
Conejos River	1943	1.27	R	8.5			R 34,360
	1944	1.69	R	9.0			R 32,054
	1945	1.48	R	9.0			R 37,200
	1946	.94	R	8.8	N 2,004		R 41,625
Sec. 2	1947	1.91	R	8.6			R 40,052 L 2,895
Crystal River	1945	1.85	R	9.0			R 18,897
	1946	1.16	R	8.7			R 17,823
	1947	1.12	R	8.5			R 20,640 N 38,554
Cucharas River	1943	1.55	R	8.5	L 59,940		R 2,961 N 395
	1944	1.45	R	8.5		R 22,000	R 3,366
	1945	1.54	R	8.0			R 3,028
	1946	1.02	R	8.7			R 6,028
	1947	1.17	R	8.6			R 14,891 L 912
Dolores River	1943	1.29	R	10.0			R 9,758
	1944	.25	R	11.0			R 7,508 L 1,185
	1945	1.19	R	9.0	N 8,416 R 8,416		R 11,894 L 2,250
	1946	.55	R	8.7			R 13,410 L 6,014
	1947	.37	R	8.3			R 12,105 L 2,760
Elk River (Yampa)	1944	1.91	R	10.0	B 3,840		R 4,582 L 756
	1945	1.63	B	10.0	N 8,196	R 10,000	R 13,592 L 4,000
	1946	.64	R	9.3			R 4,470
Sec. 2	1947	1.51	R	10.3			R 5,072
Frying Pan River	1944	.68	R	8.0			R 22,068 L 644
	1945	1.63	R	8.0			R 17,069 L 2,497
	1946	1.15	R	9.9	N 46,992		R 22,253 L 2,830
	1947	.98	R	9.7			R 39,082 L 6,598
Gunnison River	1943	1.94	R	9.5	R 17,600 L 17,600		R 72,176
	1944	1.02	R	10.5		R 15,000	R 74,200
	1945	1.44	R	10.0	R 105,500	R 47,600	R 42,200
	1946	.62	R	11.1	L 110,000	L 20,000	R 60,500
	1947	.82	R	10.9			R 74,437 L 31,300

TABLE VII (Continued)

Stream or River	Year	Catch Per Man Hour	Dominant Species	(All Trout) Average Length Inches	Stocking Record Under 3"	3" to 6"	Over 6"
Huerfano River	1943	1.21	R	9.0	N 18,172		R 3,797 N 700
	1944	.96	R	9.5	L 10,992		R 2,902
	1945	1.14	R	9.5			R 1,008
	1946	.69	R	9.1	L 10,000		R 990
	1947	1.45	R	8.2	N 8,000		R 831 L 831
Lake Fork Gunnison River	1944	2.29	R	9.0			
	1945	1.98	B	9.0			R 1,800
	1946	1.01	B	9.3			R 3,600
	1947	1.44	R	10.0			R 9,000
Los Pinos River	1943	2.72	B	9.0			R 8,536 L 1,750
	1944	1.52	B	10.0			R 3,588 L 3,234
	1945	1.0	N	10.0	N 37,440 B 760		R 22,290
	1946	.38	R	9.6		R 2,352	R 14,857 L 1,216
	1947	.56	R	9.1			R 29,536
Poudre River	1943	.74	R	9.0		R 25,160 L 9,175	R 5,648
	1944	1.00	R	9.5			R 12,133 L 12,620
	1945	1.25	R	9.5			R 49,201
	1946	.72	R	9.0			R 100,344 L 14,870
	1947	1.14	R	8.5			R 16,141 L 15,871
Prewitt Seep Ditch	1946	.98	R	10.4			R 1,215
	1947	1.44	R	8.9			R 4,818
Quartz Creek	1945	2.75	R	10.0		R 6,000	R 6,000
	1946	1.12	B	8.7			R 4,800
	1947	1.61	R	8.3			R 9,000 L 4,800
Republican River No. Fork Wray	1943	.77	R	9	R 6,600		L 2,450
	1944	.62	R	10			R 470 L 615
	1945	.98	L	9.5			R 12,932 L 5,936
	1946	.96	R	10.1			R 5,649
	1947	1.55	R	10.0			R 14,796
Rio Grand River	1943	.92	N	10.7			R 50,662 L 12,996
	1944	1.00	L	10.0			R 31,396 L 1,825 N 5,740
	1945	.89	R	9.5			R 45,237 L 8,420 N 11,052

TABLE VII (Continued)

Stream or River	Year	Catch Per Man Hour	Dominant Species	(All Trout) Average Length Inches	Stocking Record		
					Under 3"	3" to 6"	Over 6"
Rio Grand River (Cont.)	1946	.53	R	10.4			R 39,115 L 7,600
Sec. 6	1947	.77	R	9.8			R 32,320
San Miguel River	1945	1.47	R	8	N 5,760	R 4,224 L 4,224	R 18,225
	1946	1.12	R	7.6		L 13,716	R 15,012 L 3,070
	1947	.53	R	10.5		L 33,472	R 8,940
South St. Vrain	1945	1.81	R	9.0			
	1946	.64	R	8.8	R 1,600		R 5,339 L 6,408
	1947	.82	R	8.8			R 10,133 L 3,101
Tarryall Creek	1945	.62	L	9.7			
	1946	.93	L	8.6			R 920 L 1,800
	1947	.51	R	9.2			R 5,500
Taylor River	1943	1.17	R	9.5			R 25,600
	1944	1.38	R	10.5		R 5,000	R 18,500
	1945	2.31	R	10.0		R 20,650	R 6,150
	1946	.89	R	10.6		L 20,000	R 13,500
	1947	.99	R	10.3			R 20,800 L 5,900
Big Thompson River	1943	1.12	R	8.4			R 59,668
	1944	1.29	R	8.5	N 8,480		R 85,275 L 35,310
	1945	1.37	R	8.5			R 15,567 L 11,817
	1946	.75	R	8.6			R 39,274 L 14,381
Stocking in Sec. 3	1947	.92	R	9.0			R 25,842 L 30,468
White River	1943	1.40	R	10.0	N 15,488 R 13,750 B 6,741		R 22,560 N 300
	1945	1.72	N	12.0		R 3,643	R 15,159
	1946	.26	N	11.8		R 5,000	R 81,532 N 2,169
	1947	.35	R	9.4			R 15,650

Trout Stocking

In an attempt to offset the take of trout caused by heavy fishing pressure in the State every effort has been made to increase the hatchery output. The progress is apparent in the following stocking table, which includes plants from State units only. In addition, 2,700,000 trout were planted in Colorado waters in 1947 by the Fish and Wildlife Service of the U.S. Department of the Interior.

TABLE VIII

TROUT STOCKED (By Number)
1944 - 1947

		YEAR			
Species	Size	1944	1945	1946	1947
Rainbow	Under 3"	541,178	1,104,960	561,275	219,997
	3" - 6"	169,978	165,306	72,950	37,318
	Over 6"	927,765	963,723	1,109,589	1,238,931
Brown or Loch Leven	Under 3"	357,511	212,590	750,784	456,860
	3" - 6"	22,693	19,203	215,112	196,185
	Over 6"	157,301	139,945	164,631	347,431
Brook	Under 3"	272,313	203,465	143,445	418,041
	3" - 6"	73,429	-	-	8,420
	Over 6"	4,047	1,617	-	440
Natives	Under 3"	536,482	983,760	1,572,833	1,359,291
	3" - 6"	25,456	67,780	1,000	-
	Over 6"	1,500	568	21,569	29,847
Grayling	Under 3"	-	-	-	-
	3" - 6"	-	27,948	-	-
	Over 6"	3,300	-	-	-
Totals Trout, Charr, Grayling	Under 3"	1,707,484	2,504,775	3,028,337	2,454,189
	3" - 6"	291,556	280,237	289,062	241,923
	Over 6"	1,093,913	1,111,951	1,295,789	1,616,649
Total All Sizes Trout, Charr, Grayling		3,092,953	3,896,963	4,613,188	4,312,761

Out of State Fishermen

Of all the trout fishermen contacted by wardens last summer 8.3 percent were out-of-state fishermen. The catch per man hour for out-of-state fishermen in 1947 was .59, considerably below the catch per man hour for all trout fishermen. The non-resident fishermen caught 5.5 percent of the fish checked by wardens.

About one-half of the non-resident fishermen checked fished on either Vallecito Reservoir, the Rio Grande River or the Conejos River. Breaking these areas down, thirty-eight percent of the out-of-state fishermen were checked on Vallecito, nine percent on the Rio Grande (South Fork included) and seven percent on the Conejos. However, warden checking on Vallecito was much more intensive in 1947 than is usual.

PART TWO

Warm Water Lakes

The lake contacts totaled 3,911 fishermen who fished 5,134 hours and averaged 1.31 hours each at the time of contact. The catch per man hour was 1.34 fish. Since so few out-of-state fishermen were contacted on the warm water lakes, no data was compiled on the number or catch of non-resident fishermen.

Shortly after the high water period, a run of Channel Catfish appeared in the lower reaches of the Arkansas River, and numerous catches of these fish were made. A few of the Channel Catfish can still be found in the deeper holes of the River. The average length in inches of these fish was 13.3.

The following table is compiled from 3,911 warden contacts made on 62 warm water lakes in 1947:

TABLE IX

WARM WATER LAKES

	Number of Fish Checked	Percent of Total Fish Checked	Average Length In Inches
Bass	62	1.25	8.6
Bluegill	56	1.13	5.4
Bullhead Catfish	3,117	63.26	7.9
Common Channel Catfish	81	1.63	13.3
Blue Channel Catfish	1	-	21.0
Crappie	381	7.70	6.0
Perch	1,180	23.72	4.3
Trout	65	1.31	10.3

Table X - Explanation

Comparison by years in Table X are subject to bias because of the war years and the increased warden staff in 1947.

TABLE X

WARM WATER LAKES
COMPARISON TABLE - 1943-47

Year	Number of Fishermen Contacted	Catch Per Man Hour (No.of Fish)	Perch	Bluegill	Crappie	Cat Fish	Sun Fish	Bass	Channel Catfish	Trout	
1943	1,682	1.02	51.68	3.33	12.73	15.85	-	.54	-	15.87	*
											**
1944	1,134	1.55	2.0	48.0	11.0	34.0	-	4.0	-	1.0	*
											**
1945	1,968	.92	25.1	6.4	24.0	43.5	-	.8	.9	-	*
			6.5	6.0	7.0	8.0	-	10.0	18.0	-	**
1946	5,003	1.08	20.37	2.2	31.05	45.53	.50	.31	.04	-	*
			7.33	5.61	7.52	8.96	3.79	10.16	23.33	-	**
1947	3,911	1.34	23.72	1.13	7.7	63.26	-	1.25	1.63	1.31	*
			4.30	5.40	6.0	7.9	-	8.6	13.3	10.3	**

*Percent of Catch
**Average Length (Inches)

Table XI
Comparison Table - Explanation

The following comparison table is compiled from warden reports on warm water fishing, for the years 1944 through 1947. It includes those lakes which are most heavily fished and frequently warden checked. Comparison was made of those waters which showed the best representative samples.

It will be noted that trout were stocked in one of the lakes in Table XI. This brings up the question as to what is considered a warm water lake. When a lake contains a mixed warm water and trout population, it is placed in the category of the dominating species.

TABLE XI

COMPARISON TABLE OF WARM WATER LAKES

Lake or Reservoir	Year	Number of Fishermen Contacted	Catch Per Man Hour	Catfish Checked. Percent of Total	Bass Checked. Percent of Total	Perch Checked. Percent of Total	Crappie Checked. Percent of Total	Bluegill Checked. Percent of Total	Average Length of Dominant Species	Stocking Record	
										Under 3"	3" to 6"
Black Hollow Reservoir	1945	6	1.38	62.		31.					
	1946	219	3.91	95.4		4.6					
	1947	55	2.25	96.8		3.2			Cat. 7.6"		
Hillsboro Reservoir	1945	10	2.0				100.			B,BG,CR, 24,675	
	1946	50	1.37				98.	2.			
	1947	39	1.19		2.5		97.5		Cr. 9.8"		
McCalls Lake	1945	6	.50		100.						
	1946	1	.09		100.						
	1947	128	1.15		85.1	12.5		2.4	Cr. 7 "	B,BG,CR, 106,500	
Mitote Lake	1946	7	2.5			100.					
	1947	63	1.7	42.4	13.4	44.2			P. 7.3"		
North Sterling Reservoir	1945	15	1.01			27.	73.				
	1946	578	1.58	12.		13.	75.				R 5,200
	1947	79	1.46	8.		3.	89.		Cr. 7.6"		
Jumbo Reservoir	1944	41	.99	61.		39.				B,BG,CR, 26,880	
	1945	61	1.64	48.		34.	18.				
	1946	602	.99	58.5		41.5					
	1947	932	1.70	1.4		18.6	80.		Cr. 9.4"		
Sweetwater Reservoir	1945	5	1.33	100.							
	1946	6	.80	83.		17.					
	1947	23	.93	100.					Cat. 9 "		

KEY:
CAT - Catfish
B - Bass
R - Rainbow
P - Perch
BG - Bluegill
CR - Crappie

Warm Water Stocking

Stocking of warm water fish is an entirely different problem from stocking trout. Warm water fish have a very high reproductive potential and an over-population of warm water fish in a lake is more to be guarded against than an under-population. Warm water hatchery fish can be wisely stocked in only two ways: to start a balanced population of fish in a barren lake, or to help bring about a balanced warm water fish population in a lake that has, for some reason, developed an over-population of one or more species of fish. An over-population of warm water game fish means the fish population in the lake is stunted in size and of little or no value to the average fisherman. Obviously, further stocking of the stunted species is detrimental. A warm water hatchery system, comparable in size and number to the present trout producing units, is not necessary to accomplish the above purposes.

TABLE XII

WARM WATER FISH STOCKED
(By Number)

1944-1947

Species	Size	1944	1945	1946	1947
Catfish	Over 6"		6,500	3,000	
	Under 3"	54,200			
Bluegills	Under 3"	148,125	54,075	89,730	129,064
	3" - 6"		180		
Bass	3" - 6"		1,050		
	Under 3"	30,415	28,000	45,820	37,667
	Under 6"		6		
Crappie	3" - 6"		120		
	Under 3"	143,325	49,225	89,730	51,811
	Over 6"		25		
Perch	3" - 6"		15,250		
	Under 3"	10,000			19,000
Total Warm Water Fish					237,542

UNIVERSITY OF ILLINOIS-URBANA
3 0112 118422754